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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,939	02/28/2005	Ashna Bajpai	3875.041	2539
30448	7590	11/13/2006	EXAMINER	
AKERMAN SENTERFITT P.O. BOX 3188 WEST PALM BEACH, FL 33402-3188			VANOV, TIMOTHY C	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/525,939	<b>Applicant(s)</b> BAJPAI ET AL.	
	<b>Examiner</b> Timothy C. Vanoy	<b>Art Unit</b> 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

- a) The title header to paragraph no. 00061 in the specification needs to be changed to "Brief Description of the Drawings".

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-13, 16-21, 27, 28, 31, 32 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a) In claims 6-13 and 16-20, the term "near" is a relative term, which is not defined by the specification. Therefore "near" renders the claims vague and indefinite.
- b) In claims 21 and 40, the term "cold" is a relative term, which is not defined by the specification. Therefore, "cold" renders the claims vague and indefinite.
- c) In claim 27, there is a range claimed within a range (specifically, "... the temperature in the range of 230-320 °C, preferably in the range of 250-280 °C") and this

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renders the claim indefinite: please see section 2173.05(c)(I) in the MPEP 8<sup>th</sup> Ed Rev. 3 Aug. 2005 for further details.

d) In claim 28, there is a range claimed within a range (specifically, “. . . range for 6-14 hours, preferably 8-12 hours”) and this renders the claim indefinite: please see section 2173.05(c)(I) in the MPEP 8<sup>th</sup> Ed Rev. 3 Aug. 2005 for further details.

e) In claims 31 and 32, the term “slowly” is a relative term, which is not defined by the specification. Therefore, “slowly” renders the claims vague and indefinite.

f) In claim 32, “preferably” renders the claim vague and indefinite because preferences are properly set forth in the specification rather than the claims: please see section 2173.5(d) in the MPEP 8<sup>th</sup> Ed Rev. 3 Aug. 2005 for further details.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-44 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the article titled "Epitaxial growth of CrO<sub>2</sub> thin films by chemical-vapor deposition from a Cr<sub>8</sub>O<sub>21</sub> precursor" by P. G. Ivanov et al.

Fig. 1 on pg. 1037 in the Ivanov et al. article discloses the formation of a composition of the general formula CrO<sub>x</sub> where x may vary from 1.50 to 3.00 at

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temperatures ranging from 200 to 450 °C. It appears that the  $\text{CrO}_2$  is formed at a temperature of about 375 °C. This  $\text{CrO}_2$  came the decomposition of a  $\text{Cr}_8\text{O}_{21}$  precursor. The graph shows the formation of various chromium oxides (such as  $\text{CrO}_3$ ,  $\text{Cr}_8\text{O}_{21}$ ,  $\text{Cr}_2\text{O}_5$  and  $\text{Cr}_2\text{O}_3$ ) as a function of the selected heating temperatures. Please also note that pg. 1037, col. 2, 1<sup>st</sup> full paragraph reports that "Heating for shorter times or at intermediate temperatures gave powders that showed only combinations of these phases. . .".

The difference between the applicants' claims and this Ivanov et al. article is that the applicants' claim 25 has limited the heating time to 1 to 5 hours, however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made because it is reasonably expected that the same process for preparing the same chromium oxides by heating the same chromium oxide precursors at the same temperature will inherently be heated for the same claimed length of time. Since no actual difference is seen or has been shown between the heating times, then the claims are rejected under 35USC102 - as well as 35USC103.

It is submitted that the compositions resulting from the same process will inherently be the same.

The following references from the applicants' Search Report are made of record:

U. S. Patent 3,117,093 disclosing a process for the preparation of ferromagnetic chromium dioxide;

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U. S. Patent 3,449,073 disclosing a process for the preparation of chromium dioxide and a product thereof;

U. S. Patent 3,979,310 disclosing a process for preparing ferromagnetic chromium dioxide;

U. S. Patent 4,126,714 disclosing a process for treating chromium dioxide;

G. B. Patent Specification 1,274,880 disclosing a process for the preparation of chromium pentoxide and ferromagnetic chromium dioxide made therefrom;

The English abstract of G. B. Patent Specification 1,343,622 A disclosing high purity chromium dioxide;

The article titled "Junction-like magnetoresistance of intergranular tunneling in field-aligned chromium dioxide powders" by Dai et al. disclosing chromium dioxide, and

The article titled "Production and magnetotransport properties of CrO<sub>2</sub> films" by Ranno et al. disclosing chromium dioxide films.

The following additional references are made of record:

U. S. Patent 4,092,439 disclosing a process for obtaining chromium dioxide;

U. S. Patent 4,428,852 disclosing the continuous synthesis of chromium dioxide,  
and

U. S. Patent 5,378,383 disclosing a process for preparing modified chromium dioxide.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Timothy C. Vanoy*  
Timothy C Vanoy  
Primary Examiner  
Art Unit 1754

tv